

AMENDMENTS TO THE CLAIMS

AMENDED CLAIM SET:

Claims 1-45. (canceled)

46. **(Currently Amended)** A method for expressing in a determined eucaryotic cell, a polypeptide capable of interacting with a nucleotide sequence designated IPCS which comprises the DNA sequence AAATGNNNNC (SEQ ID NO: 2), wherein N means any nucleotide (G, A, C or T(U)), and capable of acting as a positive transcription factor for the transcription of a nucleotide sequence placed under the control of said (PCS sequence and present in said eucaryotic cell, comprising expressing in said eukaryotic cell a polynucleotide comprising a nucleotide sequence selected from the group consisting of:

- (i) a nucleotide sequence comprising the DNA sequence of SEQ ID NO: ~~1~~38, and represented in Figure 14A, or of SEQ ID NO: ~~3~~44 and represented in Figure 14B;
- (ii) a nucleotide sequence encoding a polypeptide having the amino-acid sequence of SEQ ID NO: ~~2~~40, and represented in Figure 15A or encoding a polypeptide having the amino-acid sequence of SEQ ID NO: 46 and represented in Figure 15B;
- (iii) a nucleotide sequence comprising the DNA sequence of SEQ ID NO: 45, and represented in Figure 14C ;

- (iv) a nucleotide sequence encoding a polypeptide having the amino-acid sequence of SEQ ID NO: ~~6~~47, and represented in Figure 15C;
- (v) a nucleotide sequence derived from sequence defined under (i), (ii), (iii) or (iv) wherein said sequence is modified particularly by deletion, addition or substitution of one or more nucleotides providing that the resulting nucleotide sequence encodes a polypeptide capable of binding said nucleotide sequence designated IPCS.

47. **(Previously Presented)** The method of claim 46 wherein the expressed polypeptide acts as a positive transcription factor for a gene involved in a process selected from the group consisting of control of cellular growth, cellular proliferation, cellular differentiation or cellular apoptosis.

48. **(Previously Presented)** The method according to claim 46, wherein the nucleotide sequence comprises the cDNA corresponding to a 2.5kb coding sequence of the transcript of the PRDII-BF1 gene.

49. **(Previously Presented)** The method according to claim 48, wherein a start codon is added upstream from exon III of the PRDII-BF1 gene.

50. **(Previously Presented)** The method according to claim 48, wherein the nucleotide sequence comprises the succession of exons III, V, VI, VII, VIII and IX of the PRDII-BF1 gene, said nucleotide sequence being devoid of exon IV of said PRDII-BF1 gene in the case of GAAP-1 and containing the first 45 nucleotides of exon IV in the case of GAAP2.

51. **(Currently Amended)** The method according to claim 46 in which the nucleotide sequence codes for a GAAP-1 polypeptide comprising the amino acid sequence of SEQ ID NO: ~~2-40~~ or ~~4-46~~ or for a GAAP-2 ~~polypeptide~~ polypeptide comprising the amino acid sequence of SEQ ID NO: ~~647~~.

52. **(Previously Presented)** the method according to claim 46, wherein the nucleotide sequence codes for a variant of the GAAP-1 polypeptide or the GAAP-2 polypeptide, said variant being derived from GAAP-1 or GAAP-2 by insertion, deletion or substitution of one or several amino acid residues, provided it retains the property of GAAP-1 or GAAP-2 to bind an IPCS sequence and to act as a transcriptional factor for the for the transcription of a nucleotide sequence placed under the control of said IPCS sequence and present in a eucaryotic cell.

53. **(Currently Amended)** The method according to claim 46, in which the nucleotide sequence hybridizes under stringent conditions with the

DNA sequence of SEQ ID NO: 1-38 or 3-44 or with the DNA sequence of SEQ ID NO: 545.

54. **(Previously Presented)** The method according to claim 46, wherein said nucleotide sequence is placed under the control of a promoter sequence selected among constitutive or inducible promoters.

55. **(Previously Presented)** The method according to claim 46, wherein the eucaryotic cells are malignant cells.

56. **(Previously Presented)** The method according to claim 46, wherein the eucaryotic cells are those of a developed tumor.

57. **(Previously Presented)** The method according to claim 46, for the control of cell apoptosis.

58. **(Previously Presented)** The method according to claim 46, wherein the positive regulation of transcriptional activity is obtained for a gene selected from the group consisting of p53, IRF1, Rb, p21 (WAF1), p27, wt1, bax, TNF receptor and FAS.

59. **(Previously Presented)** The method according to claim 46, wherein the positive regulation of transcriptional activity allows regulation of transcription of several genes in said eukaryotic cell.

60. **(Currently Amended)** A polynucleotide comprising the nucleotide sequence comprising the DNA sequence of SEQ ID NO: 138, represented in Figure 14A, said nucleotide-sequence being devoid of the sequence forming exon IV in the PRDII-BF1 gene.

61. **(Currently Amended)** The polynucleotide of claim 60 which consists of the DNA sequence of SEQ ID NO: 138.

62. **(Currently Amended)** The polynucleotide according to claim 60 which is selected from the group consisting of:

- (i) a fragment of the DNA sequence of SEQ ID NO: 138 (Figure 14A), or a fragment of the DNA sequence of SEQ ID NO: 344 (Figure 14B) which can be used as a specific probe to detect the presence of said DNA sequence of SEQ ID NO: 138, 344 or 545 or a mutated sequence thereof, in a sample,
- (ii) a nucleotide sequence encoding a polypeptide having the amino-acid sequence of SEQ ID NO: 240, or a nucleotide sequence encoding a polypeptide having the amino-acid sequence of SEQ ID NO: 446 or a nucleotide sequence encoding a polypeptide having the amino acid sequence of SEQ ID NO: 647,

(iii) a nucleotide sequence derived from sequence defined under (i) or (ii) wherein said sequence is modified, especially by deletion, addition or substitution of one or more nucleotides providing that the resulting nucleotide sequence encodes a polypeptide capable of binding a nucleotide sequence designated IPCS which comprises the DNA sequence AAATGRYKKC (SEQ ID NO: 15), and is capable when used in appropriate conditions, of expressing in a determined eucaryotic cell, a polypeptide interacting with the nucleotide sequence designated IPCS and acting as a positive transcriptional factor for the transcription of a nucleotide sequence placed under the control of said IPCS sequence and present in said eucaryotic cell.

63. **(Previously Presented)** A polynucleotide comprising the nucleotide sequence which is contained on plasmid pGAAP1 deposited at the ECACC under accession no. 01052921.

64. **(Previously Presented)** A recombinant polypeptide that is the product of the expression in a eucaryotic cell of a nucleotide sequence coding for a polypeptide capable of interacting with the nucleotide sequence designated IPCS and capable of acting as a positive transcription factor for the transcription of a nucleotide sequence

placed under the control of said IPCS sequence and present in said eucaryotic cell.

65. **(Previously Presented)** A recombinant polypeptide, being the product of the expression in a eucaryotic cell, of a nucleotide sequence according to claim 60.

66. **(Previously Presented)** A recombinant polypeptide according to claim 64 which regulates the transcriptional activity of a gene selected among p53 and IRF1 when it is expressed in a eucaryotic cell constitutively expressing said gene.

67. **(Previously Presented)** A recombinant polypeptide according to claim 65 which regulates the transcriptional activity of a gene selected among p53 and IRF1 when it is expressed in a eucaryotic cell constitutively expressing said gene.

68. **(Previously Presented)** A recombinant polypeptide according to claim 64 which has an apparent molecular weight of 75 kDa by SDS PAGE electrophoresis.

69. **(Previously Presented)** A recombinant polypeptide, being the expression product in a mammalian cell, of a nucleotide sequence

according to claim 60, said recombinant polypeptide including post translational modification enabled in said eucaryotic cell.

70. **(Currently Amended)** The recombinant polypeptide according to claim 64 which comprises the amino acid sequence of SEQ ID NO: ~~2, 4 or 640~~, 46, or 47.

71. **(Currently Amended)** The recombinant polypeptide according to claim 64 which comprises a fragment of the amino acid sequence of SEQ ID NO: ~~2-40~~ provided the polypeptide is capable of interacting with the nucleotide sequence designated IPCS to act as a positive transcription factor for the transcription of a nucleotide sequence placed under the control of said IPCS sequence and present in said eucaryotic cell.

72. **(Previously Presented)** A recombinant eucaryotic cell comprising an inserted polynucleotide comprising the nucleotide sequence according to claim 60.

73. **(Previously Presented)** The recombinant eucaryotic cell according to claim 72 which expresses the polypeptide encoded by the inserted nucleotide sequence.

74. **(Previously Presented)** The recombinant eucaryotic cell according to claim 72 which is a cell expressing genes selected from the

group consisting of genes involved in the control of cell growth, genes involved in cell differentiation, genes involved in cell proliferation and genes involved in cell apoptosis.

75. **(Previously Presented)** The recombinant eucaryotic cell according to claim 72 which is a malignant cell.

76. **(Currently Amended)** A recombinant eucaryotic cell comprising an inserted polynucleotide encoding a polypeptide capable of binding a nucleotide sequence designated IPCS and comprising the DNA sequence AAATGNNNNC (SEQ ID NO: 2), to enable, in appropriate conditions, the expression of a polypeptide capable of interacting with the nucleotide sequence designated IPCS and capable of acting as a positive transcriptional factor for the transcription of a nucleotide sequence placed under the control of said IPCS sequence and present in said eucaryotic cell.

77. **(Currently Amended)** The recombinant eucaryotic cell according to claim 72, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO: 2 or 4 or 640 or 46 or 47.

78. **(Previously Presented)** The recombinant eucaryotic cell according claim 72, which is selected from the group consisting of U937, K562, SK-N-,SH, MCF7, KG1 and TF1.

79. **(Previously Presented)** A recombinant vector comprising a polynucleotide according to claim 60.

80. **(Previously Presented)** The recombinant vector according to claim 79 which is an expression vector suitable for expression of said polynucleotide in a eucaryotic cell.

81. **(Previously Presented)** The recombinant vector according to claim 80 which is suitable for transient or controlled expression of said polynucleotide.

82. **(Previously Presented)** The recombinant vector according to claim 80, wherein said polynucleotide is placed under the control of a promoter regulated by a physiologically acceptable compound.

83. **(Previously Presented)** The recombinant vector according to claim 80, wherein the transcription of said insert is placed under the control of an exogenous transactivating system.

84. **(Previously Presented)** The recombinant vector according to claim 80, which is suitable for gene therapy.

85. **(Previously Presented)** The recombinant vector according to claim 84, which is selected from the group consisting of viral, retroviral, lentiviral, poxviral, adenoviral, AAV vectors.

86. **(Previously Presented)** A composition suitable for a therapeutic use which comprises a polynucleotide according to claim 60 or a recombinant cell according to claim 72, or a recombinant polypeptide according to claim 64.

87. **(Previously Presented)** A method of treating a subject comprising administering to said subject the composition according to claim 86 in combination with an antiviral agent or an anticancer agent.

88. **(Previously Presented)** The method according to claim 87 wherein the anticancer agent is an immuotherapeutic agent, a chemotherapeutic agent or is radiotherapy.

89. **(Previously Presented)** The method according to claim 87, for the treatment of a malignant cell.

90. **(Currently Amended)** A method for the *in vitro* detection of a deficient BRDII-BFI gene comprising the steps of:
contacting a probe comprising a polynucleotide having the nucleotide sequence of SEQ ID NO: ~~1, 3 or 538~~, 44, or 45, or a fragment thereof comprising the zinc finger binding domains corresponding to the domains

localized within exon VI of the BRDII-gene, with the DNA of a cell normally constitutively expressing said gene, under stringent conditions,

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detecting the hybridization product of said probe and said cell DNA.

91. **(Previously Presented)** A method for *in vitro* detection of a deficient transcriptional activity of genes involved in the control of cell growth, cell differentiation, cell proliferation or cell apoptosis, comprising the step of detecting a deficient production of the transcript of said gene which would normally encode a polypeptide capable of binding an IPCS sequence and as a result would positively regulate the transcription of a nucleotide sequence placed under the control of said IPCS sequence.

92. **(Previously Presented)** A method for *in vitro* prognosis of transformation of cells toward a malignant state, which comprises the step of detecting a mutation in the PRDII-BFI gene normally expressed in said cells, or detecting a mutation in the transcript obtained by splicing of said gene, which mutation would result in lack of expression or in an abnormal expression of polypeptide expression product of said PRDII-BF1 gene capable of binding to an IPCS sequence.

93. **(Previously Presented)** A method for screening compounds for activity of regulating the transcriptional activity of genes containing

an IPCS sequence in their promoter region, said genes being active in the control of cell growth, cell differentiation, cell proliferation, or cell apoptosis, comprising the steps of:

- contacting said compound with DNA of a cell expressing genes containing an IPCS sequence in their promoter region,
- detecting formation of a DNA-compound complex and assaying its transcriptional activity on said gene containing the IPCS sequence.

94. **(Previously Presented)** A method of screening compounds for activity as an agonist of GAAP-1 or of GAAP-2 comprising contacting said compound with a polypeptide of claim 65 and detecting the formation of a complex of said compound and said polypeptide.

95. **(Previously Presented)** A method of screening compounds for activity as an antagonist of GAAP-1 or of GAAP-2 comprising contacting said compound with a polypeptide of claim 65 and detecting the formation of a complex of said compound and said polypeptide.